Summary and recommendations from the American Health Foundation's Expert Panel on Healthy Weight[1,2]

Jodi Godfrey Meisler and Sachiko St Jeor

OVERVIEW

The Expert Panel on Healthy Weight was faced with an extraordinary challenge: to arrive at a consensus on what is a healthy weight, which in and of itself is an elusive term. However, the opportunity to tackle a health problem that confronts the medical community every day helped motivate the panel to arrive at reasonable and responsible recommendations.

To initiate discussion, two key questions were posed from which a public health recommendation for healthy weight could be derived: *1*) What should the target be for healthy weight? and *2*) How much weight loss is enough to reduce disease risk?

Concern regarding the definition of a healthy weight and its application was widely expressed. Additionally, the concept of guidelines and the broad applications to individuals and population groups raised further debate. Ranges are often expressed to reflect a statistically derived best weight associated with the least mortality, morbidity, and disease onset. How these guidelines are interpreted in the health care setting, particularly for those individuals falling outside the range, were considered.

Weight loss is associated, in large part, with changes in dietary intake, most notably energy derived from dietary fat. Lifestyle changes have to be permanent for weight loss to last. Is weight maintenance a key strategy, especially if small adjustments in diet and activity are initiated and maintained? The panel's response was emphatically, yes, but of equal importance is the need to stress prevention of excess weight gain after early childhood so that by the age of 21 y, the goal of a stable weight is realized.

How are recommended weights derived and is there consensus that the supporting data are based on scientifically established evidence? There are many problems and assumptions, particularly regarding frame size. On what will the recommendations be based? What other factors need to be considered? Is waist-to-hip ratio one of these factors?

Effective public health recommendations need to be practical and easy to implement. Suggesting a healthier diet (more fiber and less fat and energy) and more physical activity rather than placing an emphasis on weight reduction might be more effective in the long term. We need to be bold and reach beyond our grasp to make recommendations that will motivate the public to respond.

From the outset, a case was made to base public health recommendations on the body mass index (BMI; weight in kilograms divided by height in meters squared). The BMI was selected as the most commonly used scientific tool to represent relative weight, and is considered to be highly correlated with body fatness in most populations.

A BMI for healthy weight—defined by the panel as a generous maximum upper limit to protect against development of chronic diseases—was offered as the best standard for purposes of a public health recommendation for those not yet overweight. The Expert Panel further acknowledged that the healthy-weight target was already exceeded by one in three adults, necessitating a different weight goal for overweight individuals. As such, a weight loss of 10% was proposed as sufficient to reduce disease risks associated with overweight; agreement was reached to put this weight loss—for a healthier weight—in terms of BMI for consistency in the recommendations. Making a modest weight loss the goal was considered paramount to ensure successful weight loss that could be both achieved and maintained while disease risk was also reduced. The panel's recommendations are intended to direct attention to the health advantages of sustaining a stable healthy weight throughout life.

In concluding, the Expert Panel recognized that the greatest challenge lay in motivating the public to action. Therefore, the panel aimed to propose healthy-weight recommendations in a format that would be effectively communicated to and interpreted by health professionals such that the recommendations could be easily understood by the general public. The recommendations and the discussion leading to consensus follow, and are provided for others to consider and, hopefully, to adopt.

WEIGHT LOSS RECOMMENDATIONS

It is difficult to establish healthy-weight recommendations that would encompass all disease states and attain the best possible health. Could obesity be the surrogate marker for diseases such as cancer in which an excess of dietary fat and lack of dietary fiber represent disease risk? What range of body weight, weight-gain tolerance, weight loss, or weight maintenance level should be suggested? Is simply not gaining weight a viable alternative?

[1] From the Food and Nutrition Council, American Health Foundation, New York; and the Nutrition Education and Research Program, University of Nevada School of Medicine, Reno.

[2] Address reprint requests to JG Meisler, c/o American Health Foundation, 320 East 43rd Street, New York, NY 10017.

Am J Clin Nutr 1996;63(suppl):474S–7S. Printed in USA.

Establishing good eating habits in childhood, including a high-fiber (minimum of 25 g or five fruit and vegetables and six whole-grain servings daily), low-fat (< 25% of energy) diet, will reduce the current threat of colon cancers by reducing the precursor disease (1). Additionally, implementing joint Centers for Disease Control and Prevention–American Academy of Sport Medicine recommendations for increased activity to 30 min/d cumulatively is also an important beginning because < 22% of the population currently gets adequate physical activity (2).

A BMI of 19–25 was discussed as a reasonable goal; this range was proposed by other organizations who have considered current weight standards (3, 4). Based on the presentations directed at the morbidity and mortality associated with overweight, disease risk increases both at lower (< 19) and higher (> 25–28) BMIs (5–8). Moreover, there is evidence that modest weight loss confers some metabolic advantages whereas large weight loss may not necessarily offer a substantially greater risk reduction for many chronic disease states (5, 9, 10). The loss of as little as 2.3–4.5 kg (5–10 lb) not only helps to lower blood pressure (5, 9) but also can improve blood lipids, insulin resistance, and glucose tolerance as well as protect heart muscle mass (5, 8). Conversely, weight gain affects many metabolic factors that may accelerate atherogenesis (5).

Are the effects of obesity reversible? Pessimistic views were expressed about trying to achieve major benefits in massively obese individuals, particularly in light of the fact that sustained weight loss remains an elusive goal. Because it takes 20, 30, or 40 y to reach a clinically obese state, it is impractical and usually inadvisable for most overweight individuals to attempt drastic weight reduction in as little as 1 or 2 y. However, there is certainly no evidence that massive obesity can be healthy; a point that was reinforced by one panelist's observation that BMIs of 45 are incompatible with reaching the age of 70 y.

What is a reasonable goal for improving health status and longevity? Should the answer begin with weight maintenance? Weight loss goals must be stipulated for those people who are already overweight (and not facing life-threatening illness). However, settling on a reasonable target weight is difficult. How about focusing on the lowest individual adult weight that had been maintained for ≥ 1 y?

A decrease in body weight that results from loss of skeletal muscle or bone mass does not improve a person's risk profile (11). Most of the data on body composition support the trend that heavier people lose less lean body mass than do people who are leaner to start. Data regarding bone mass are still unconvincing (11). However, women in the highest quintile of BMI show a lower relative risk of hip fracture, which by implication suggests that being overweight is somewhat protective, whereas weight loss increased the risk of hip fracture, indicating the need for special caution (11). Because heavier people also develop muscle mass to support the extra weight, some of this skeletal muscle is lost as the result of weight-reduction efforts (11). Clearly, the advantage of a higher body weight to support bone health must be balanced against the health threat from other chronic, life-threatening diseases.

In trying to establish a healthier-weight goal, the discussion turned to the function of the fat cell. Because the average fat cell measures ≈0.5 μg and can double or increase to 1 μg, a person's adiposity can essentially double while the same number of fat cells are maintained (12). Once the fat cells are filled, new fat cells that probably never disappear are produced. Clearly, the ability to return to a normal, or starting, weight would be much easier provided the number of fat cells had not increased. A person would be better off if the size of the fat cells was reduced, even if he or she did not return to a so-called ideal weight. In effect, the outcome should be to restore the fat cell to normal function, rather than to achieve blindly a numerical weight loss or achieve a specific percentage body fat.

Does not the already overweight public need a goal that emphasizes weight losses that are achievable and that can be readily and realistically maintained? Simply put, yes. Because most illnesses related to weight become evident in those who are moderately overweight, we should try to decrease the prevalence of obesity by encouraging modest weight loss when appropriate. Of equal importance is the need to convince adolescents to remain appropriately lean well into middle age.

Two compatible recommendations evolved in response to the panel's directive to define healthy weight. The recommendations were a healthy-weight target and a healthier-weight goal. The discussion, which follows, focused on defining these concepts and attaching numerical values that evolved into public health recommendations.

A HEALTHY-WEIGHT TARGET

At the outset, the Expert Panel on Healthy Weight agreed that prevention of overweight and further weight gain must be the ultimate goal of formulating recommendations for a healthy weight. The healthiest weight is one that is attained by the age of 21 y and maintained throughout life for optimal health. However, adolescents who are obese require medically supervised support to achieve a healthy weight that does not interfere with skeletal growth. A healthy-weight target was defined as a reasonable upper limit for body weight that would offer a reduction in disease risk and be within reach for most overweight adults.

Taking into consideration morbidity associated with or exacerbated by obesity, the Expert Panel arrived at a value for a healthy-weight target of a BMI < 25 for adults (in **Table 1** these data are converted to a height-to-weight ratio in inches and pounds to facilitate use by the general public) (12). The BMI was selected because it has been universally adopted as the standard in obesity research, following a recommendation issued at a 1984 National Institutes of Health conference on obesity, and was considered by the Expert Panel to be the most reliable scientific value currently available to represent a healthy weight. In a departure from other weight recommendations, a weight range was specifically avoided to keep the emphasis on the need to reduce disease risk rather than allowing attention to be drawn to a low endpoint, which would effectively reinforce the need to lose more than may be necessary to achieve improved health.

As such, healthy weight becomes the upper limit beyond which morbidities of obesity are identifiable and weight-related disease risk becomes a concern. The issue of eating disorders was acknowledged but deemed beyond the scope of the Roundtable. Furthermore, the panel chose not to recommend healthy-weight guidelines for children and adolescents, or the sector of the population aged > 65 y, all of whom have special needs for which there are insufficient data available for making recommendations.

TABLE 1
Healthy-weight target, representing upper limits for adults given height and weight, regardless of sex, as derived from a body mass index of 25[1]

Height (in)	Weight maximum (lb)
58	119
59	124
60	128
61	132
62	136
63	141
64	145
65	150
66	155
67	159
68	164
69	169
70	174
71	179
72	184
73	189
74	194
75	200
76	205

[1] To convert values to SI units: height in inches × 2.54 = height in centimeters; weight in pounds × 0.4536 = weight in kilograms.

TABLE 2
Healthier-weight goal for adults who are above the healthy-weight target given height and regardless of sex, as derived from about two-unit equivalents of the body mass index[1]

Height (in)	Weight loss (lb)
58	10
59	10
60	10
61	11
62	11
63	11
64	12
65	12
66	12
67	13
68	13
69	14
70	14
71	14
72	15
73	15
74	16
75	16
76	16

[1] To convert values to SI units: height in inches × 2.54 = height in centimeters; weight loss in pounds × 0.4536 = weight loss in kilograms.

NEW CONCEPT PROPOSED: A HEALTHIER-WEIGHT GOAL

Recognizing that roughly one-third of the population already exceeds the healthy-weight target, the Expert Panel proposed a second concept—a healthier-weight goal. The intent was to redefine successful weight loss as an amount that reduces disease risk. This approach was designed to refocus attention away from the long-held perception that success should be measured only when the ultimate ideal body weight is attained. A healthier-weight goal—expressed as the body weight achieved by a weight loss of ≈4.5–7.3 kg (≈10–16 lb), or the equivalent of approximately two BMI units (13)—is intended for individuals who are above the healthy-weight target but who have not been diagnosed with a weight-related disease (**Table 2**).

The modest weight loss, as proposed, was considered sufficient to reduce disease risk and improve health problems related to an overweight condition. Of equal importance to the panel, this target met two essential criteria—it is achievable and reasonably maintainable. Most overweight adults can improve their health status by initially aiming for the healthier-weight goal rather than attempting, and likely failing, to reach the healthy-weight target.

To reinforce the new approach of successful weight loss, the Expert Panel emphasized the importance of stabilizing body weight for ≥ 6 mo after weight reduction to ensure that the new weight becomes the usual body weight. Only then should a person attempt further weight loss in the same incremental fashion—4.5–7.3 kg, or 10–16 lb, (based on height), followed by a maintenance period of ≥ 6 mo.

For individuals who have been unable to keep past lost weight off or opted not to attempt further weight reduction, the panel suggested their weight goal focus on sustaining a stable current body weight throughout the remainder of their lives.

LIFESTYLE CHANGES PROPOSED TO IMPROVE HEALTH STATUS

Whether individuals are attempting to maintain a stable weight or trying to lose weight, the Expert Panel proposed guidelines that, although not revolutionary or novel, offer the best means for achieving a healthy weight. These guidelines are, simply and concisely, to adopt a healthy diet that is low in fat (≤25% of energy from dietary fat) and high in fiber (≥ 25 g dietary fiber from whole grains and cereals, fruit, and vegetables) and to perform daily physical activity.

Because physically active people have a lower risk of chronic diseases associated with overweight, regular physical activity should be advocated for the prevention of weight gain and the maintenance of a stable weight. At least 30 min of moderate physical activity per day should be incorporated into the goals for a healthier lifestyle.

This lifestyle approach is intended to encourage adults to achieve an energy deficit that fosters gradual, incremental weight loss that can be stabilized and maintained for a minimum of 6–12 mo, and eventually to arrive at an energy balance that can be maintained for the remainder of the adult's life.

In summary, the Expert Panel on Healthy Weight recommended two concepts to promote health: a healthy-weight target and a healthier-weight goal. These proposed weight tables were established with three criteria in mind: a simple, easy-to-follow presentation; achievable objectives; and most importantly, maintainable endpoints. By keeping these factors in the forefront of any weight-management program, the panel hoped that individuals would be more likely to successfully reduce their body weight and the morbidities associated with excess weight.

Individuals with medical complications brought about by excess weight should be advised to first achieve and maintain

a healthier weight goal—a modest weight loss of ≈4.5–7.3 kg, or ≈10–16 lb—to reduce their disease risk. This is a dramatic departure from the current recommendations, which emphasize the endpoint as an ideal weight attained by large weight losses, which are not maintained and are usually reversed. Furthermore, any attempt at weight reduction should be done in consultation with a physician familiar with the patient's medical history. The physician may seek the assistance of registered dietitians and other qualified health professionals to evaluate an individual's needs and to work with the patient to make appropriate lifestyle modifications—diet and physical activity—that support a safe and effective weight loss and maintenance effort.

The recommendations are meant to be interpreted as follows:

1) On reaching peak growth at the age of ≈21 y, body weight should be stabilized and maintained at a constant, healthy weight (BMI < 25) throughout life to prevent undesirable weight gain, except in adolescents who are medically classified as overweight and in need of medically supervised weight reduction.

2) Individuals who have a BMI > 25 should be encouraged to lose the equivalent of about two BMI units, or 4.5–7.3 kg (10–16 lb), on the basis of their height, to ensure that the weight loss is maintained for ≥ 6 mo.

3) Individuals at risk of, or suffering from, a chronic disease should consult with their physician regarding body weight recommendations to improve their condition.

The greatest two-fold challenge remains communicating these messages to the public and motivating the public to act. Developing and implementing effective health-education programs are essential if the desired outcomes of these recommendations are to be met. One idea offered to bolster the proposed healthy-weight recommendations is the establishment of a practical education program that encourages the general public to reach a healthy weight, modeled after the successful National Cholesterol Education Program that has raised the public's awareness of serum cholesterol. Such a campaign could raise awareness of the importance of body weight to health and provide practical guidelines for achieving a healthy weight. ■

REFERENCES

1. Wynder EL, Weisburger JH, Ng SK. Nutrition: the need to define "optimal" intake as a basis for public policy decisions. Am J Public Health 1992;82:346–50.
2. Blair SN. Diet and activity: the synergistic merger. Nutr Today 1995; 30:108–12.
3. Blackburn GL, Dwyer JT, Flanders WD, et al. Report of the American Institute of Nutrition Steering Committee on Healthy Weight. J Nutr 1994;124:2240–3.
4. Committee on Diet and Health, National Research Council. Diet and health: implications for reducing chronic disease risk. Washington, DC: National Academy Press, 1989:564.
5. Kannel WB, D'Agostino RB, Cobb JL. Effect of weight on cardiovascular disease. Am J Clin Nutr 1996;63(suppl):419S–22S.
6. Felson D. Weight and osteoarthritis. Am J Clin Nutr 1996;63(suppl): 430S–2S.
7. Ballard-Barbash R, Swanson CA. Body weight: estimation of risk for breast and endometrial cancers. Am J Clin Nutr 1996;63(suppl): 437S–41S.
8. Pi-Sunyer FX. Weight and non-insulin-dependent diabetes mellitus. Am J Clin Nutr 1996;63(suppl):426S–9S.
9. McCarron DA, Reusser ME. Body weight and blood pressure regulation. Am J Clin Nutr 1996;63(suppl):423S–5S.
10. Shike M. Body weight and colon cancer. Am J Clin Nutr 1996; 63(suppl):442S–4S.
11. Wardlaw GM. Putting body weight and osteoporosis into perspective. Am J Clin Nutr 1996;63(suppl):433S–6S.
12. Bray GA. Healthy weight. Obes Res 1993;1 (editorial).
13. Abernathy RP, Black R. Healthy body weights: an alternative perspective. Am J Clin Nutr 1996;63(suppl):448S–51S.